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# AMPHIBIA

COMPILED BY

ALICE G. C. GRANDISON, B.Sc. (Recent)

and

W. E. SWINTON, PH.D. (Fossil)

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## 1.—TITLES

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*Bufo linderi*, sp. nov. from Dar-es-Salaam, Tanganyika, related to *B. ushoranus* and *B. micranotis*, Jh. Ver. vaterl. Naturh. Würtemb. 110 1955 p. 48, **Mertens, R. (1)**.

*Bufo luristanicus*, from Iran; description and diagnosis, affinities with *B. surdus* and *B. persicus* discussed, **Schmidt, K. P. (3)**.

*Bufo marinus*, response of the male to gonadotrophins, **Floch, H. & Fauran, P.**—Action of yohimbine on nerve and muscle, **Shaw, F. H., Holman, M. & Mackenzie, J. G.**—Spermiation by injections of oxalic acid and oxalates, **Tabarelli-Neto, J. F., Salles-Gomes, C. D. de & Fernandez, M.**—On Gomori-positive granules of the choroid plexus of the third ventricle, **Tramezzani, J. H. & Uranga, J. V.**—*B. m. horribilis*, from Los Tuxtlas, Veracruz, **Shannon, F. A. & Werler, J. E. (2)**.

*Bufo marmoreus*, from Chiapas, Mexico, **Smith, H. M. & Burger, W. L.**

*Bufo mazatlanensis*, from Sinaloa, Mexico, **Riemer, W. J.**—*B. m. mazatlanensis*, abundant in Sonora, Mexico; preyed on by *Drymarchon* and *Thamnophis*, **Zweifel, R. G. & Norris, K. S.**

*Bufo melanostictus*, from Ceylon; note on distribution, **Silva, P. H. D. H. de (1)**.

*Bufo microscaphus*, study of distribution, ecology, variation and hybridization with *B. woodhousei* in S.W. Utah, **Blair, A. P.**—From S.W. Chihuahua and S.W. Durango; extension of range to S.E. Note on status, **Riemer, W. J.**—*B. m. microscaphus*, from Mojave-Yavapai county line and Yavapai Co., Arizona, **Duellman, W. E. (2)**.

*Bufo occidentalis*, from N.W. Chihuahua, Mexico; note on range, **Riemer, W. J.**

*Bufo ocellatus*, from S.E. Brazil, redescribed and figured, **Cochran, D. M.**

*Bufo paracnemis*, from Central Chaco, Argentina, **Cei, J. M.**—From S.E. Brazil. Redescribed and figured. Note on distribution and affinities with *B. marinus*, *B. ictericus* and *B. arenarum*, **Cochran, D. M.**—Spermiation by injections of oxalic acid and oxalates, **Tabarelli-Neto, J. F., Salles-Gomes, C. D. de & Fernandez, M.**

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*Bufo quericus*, breeding records in S.E. North Carolina, **Funderburg, J. B. Jr.**—From Mississippi, **Smith, P. W. & List, J. C.**

*Bufo regularis*, changes due to ageing in golgi apparatus of neurones, **Moussa, T. A. & Banhawy, M.**—Anatomy and dissection; notes on life history; figs., **Webb, G. C.**—

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*Acris crepitans*, habitat in Cherokee Co., Oklahoma, **Bragg, A. N. (2).**

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*Agalychnis callidryas*, from San Andres Tuxtla, Veracruz, **Shannon, F. A. & Werler, J. E. (2)**.—*A. dactylos*, from S. Sonora, Mexico, **Zweifel, R. G. & Norris, K. S.**—*A. saltator* sp. nov., 4 kms. N.N.E. of Tilaran, Guanacaste, Costa Rica. Related to *A. moreletii*, found in association with *A. callidryas*, p. 527, photograph, **Taylor, E. H.**

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*Anotheca coronata*, habitat on Volcan San Martin, Veracruz, **Shannon, F. A. & Werler, J. E. (2)**.

*Aparasphenodon*, translation of generic diagnosis. *A. brunoi* from S.E. Brazil redescribed and figured. Note on habits and cry, **Cochran, D. M.**

*Bradymedusa moschata*, a synonym of *Phyllomedusa rohdei*, **Cochran, D. M.**

*Diaglena*, discussion on status. *D. reticulata*, specimens from Ostula, Michoacan; notes on call, habits and habitat; skull figd., **Peters, J. A. (3)**.

*Gastrotheca*, key to species of S.E. Brazil. Species recognised and described:—*ernestoi*; *microdisca* (note on similarity to *Hyla venulosa* figs.): *viridis*, **Cochran, D. M.**

*Hyla*, key to Southeastern Brazil species, **Cochran, D. M.**—Bronchial columellae absent from larval ear, **Witschi, E. (1)**.

*Hyla adelaidensis*, from Oenpelli, Arnhem Land, N.T., **Mitchell, F. J.**—From Nangabrook, W. Australia; description (photo.) and note on habitat, **Slevin, J. R.**

*Hyla albofrenata*, from S.E. Brazil, redescribed and figd., **Cochran, D. M.**

*Hyla albomarginata*, from S.E. Brazil, redescribed and figd.; note on call and habits. Includes *H. massarti*, **Cochran, D. M.**

*Hyla albopunctata*, from S.E. Brazil redescribed and figured. Note on habits and call, **Cochran, D. M.**

*Hyla albosignata*, from S.E. Brazil; redescribed and figd., **Cochran, D. M.**

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*Hyla andersoni*, on possible occurrence in Maryland, **Cooper, J. E.**

*Hyla arborea*, of Sweden, **Curry-Lindahl, K.**—Vascularisation of skin, lungs and palate; figs., **Czopek, J. (1)**.—Of Czechoslovakia, **Ferianc, O.**—In Germany; general notes, larval mouthparts figd., **Freytag, G. E.** in **Stresemann, E.**—Habitat in district west of L. Zurich, **Heusser, H. & Honegger, R.**—Circulatory system; characters unique in Salientia, **Michniewska, Z. & Skirgajew, G.**—*H. a. arborea*, of Great Poland National Park, Poznan, **Berger, L.**—Distribution in Lower Austria, **Sochurek, E. (1)**.—*H. arborea japonica*, from Japan, **Sato, I. & Takashima, H.**—*H. arborea meridionalis*, life cycle in Spain, **Balcels, E.**—*H. arborea sarda*, from Elba, **Mertens, R. (2)**.—*H. arborea savignyi*, from Iran, **Schmidt, K. P. (3)**.

*Hyla arenicolor*, wide range in S.W. Utah; occurs up to 5000 ft., **Blair, A. P.**—Of Arizona, **Duellman, W. E. (2)**.—From Baja California, **Murray, K. F.**—From Oaxaca, Mexico; extension of range, **Smith, H. M. & Burger, W. L.**

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*Hyla aurea*, anatomy and function of the carotid labyrinth, **Carman, J. B.**—On genetic divergence of east and west Australian populations; behaviour as distinct species, **Moore, J. A. (1)**.—From Nangabrook, W. Australia; description and note on habitat, photo., **Slevin, J. R.**

*Hyla avivoca avivoca*, from Jackson Co., Mississippi, **Smith, P. W. & List, J. C.**

*Hyla axillamembrana* sp. nov., 1400 ft., 5 mls. S. Lake Catemaco, San Andres Tuxtla-Minatitlan road, Veracruz, belongs to *loquax* group, most closely related to *loquax* and *rickardsi*; figs., p. 383, **Shannon, F. A. & Werler, J. E. (2)**.

*Hyla baudini*, altitudinal distribution and associated vegetation in a Mexican cloud forest; diags., **Martin, P. S.**—From Sonora, Mexico; habitat, **Zweifel, R. G. & Norris, K. S.**—*H. b. baudini*, from Ostula, Michoacan, **Peters, J. A.** (3).

*Hyla bicolor*, from Arnhem Land, N.T., Australia, **Mitchell, F. J.**—From Queensland and N.S.W.; note on habitat, photo., **Slevin, J. R.**

*Hyla bipunctata bipunctata*, from S.E. Brazil; redescribed and figd. Note on habits, **Cochran, D. M.**

*Hyla bischoffi multilineata*, from S.E. Brazil, redescribed and figured. Compared with *H. raddiana*, **Cochran, D. M.**

*Hyla bistincta*, tadpoles descd.; mouthparts figd., comparison with *H. robertsorum*, and *Plectrohyla guatemalensis*, **Rabb, G. B. & Mosimann, J. E.**—*H. b. bistincta*, from W. Acultzingo, Veracruz, 7000 ft.; note on habitat, **Shannon, F. A. & Werler, J. E.** (1).

*Hyla bivittata*, a synonym of *H. minuta*, **Cochran, D. M.**

*Hyla caerulea*, from Arnhem Land, N.T., Australia, **Mitchell, F. J.**—From Queensland and N.S.W.; description and note on habits, **Slevin, J. R.**

*Hyla cinerea*, relationship between size and metabolic rate, **Davison, J.**—From Mississippi, **Smith, P. W. & List, J. C.**—*H. c. cinerea*, habitat and breeding dates in New Hanover Co., N. Carolina, **Funderburg, J. B. Jr.**—An occurrence in W. Tennessee, **Gentry, G.**—Habitat in Bayou Tortue region, Lafayette Parish, Louisiana, **Liner, E. A.**—Late August breeding in Florida, **Moulton, J. M.**

*Hyla circumdata*, a synonym of *H. crepitans*, **Cochran, D. M.**

*Hyla claresignata*, from S.E. Brazil; redescribed and figd., **Cochran, D. M.**

*Hyla clepsydra*, from S.E. Brazil, redescribed and figd. Note on affinity with *H. bischoffi multilineata*, **Cochran, D. M.**

*Hyla corticalis* Burmeister. A synonym of *H. pardalis* Spix, **Cochran, D. M.**

*Hyla crepitans*, from S.E. Brazil. Redescribed and figd. Note on affinities with *H. raniceps* and *H. faber*. Includes *H. circumdata*, **Cochran, D. M.**

*Hyla crosopedospila*, from S.E. Brazil; redescribed and figured. Note on affinity with *H. fuscomarginata* and *H. cuspidata*, **Cochran, D. M.**

*Hyla crucifer*, cortical ingression during egg cleavage, **Ballard, W. W.**—Common in S.E. North Carolina; note on breeding dates, **Funderburg, J. B. Jr.**—*H. c. crucifer*, from Cherokee Co., Oklahoma, **Bragg, A. N.** (2).—Of S. Maryland, **Cooper, J. E.**—Note on call and habitat in Tennessee, **Gentry, G.**—Habitat in Bayou Tortue region, Lafayette Parish, Louisiana, **Liner, E. A.**—Range in Canada; records; map, **Logier, E. B. S. & Toner, G. C.**—From Athens area, N.C. Georgia. Note on breeding dates and habitat, **Martof, B.**—From Cherokee County, N. Carolina, **Schwartz, A.**

*Hyla cuspidata*, from S.E. Brazil; redescribed and figured, **Cochran, D. M.**

*Hyla decipiens*, from S.E. Brazil; redescribed and figured. Notes on affinities with *H. goughi* and *H. leucophyllata* and egg laying habits, **Cochran, D. M.**

*Hyla elongata*, from S.E. Brazil; redescribed and figured. Note on affinities with *H. sanborni*, **Cochran, D. M.**

*Hyla ewingi alpina*, from N.S.W., photo., **Slevin, J. R.**—*H. e. verauxii*, from N.S.W., variation in pattern in Blue Mts. individuals, **Slevin, J. R.**

*Hyla eximia*, tadpoles descd. and compared with *H. robertsorum*, **Rabb, G. B. & Mosimann, J. E.**—From Volcan San Martin, Veracruz, **Shannon, F. A. & Werler, J. E.** (2).

*Hyla faber*, from Central Chaco, Argentina, **Cei, J. M.**—From S.E. Brazil. Redescribed and figd., note on nesting habits and call, **Cochran, D. M.**

*Hyla femoralis*, on possible occurrence in S. Maryland, **Cooper, J. E.**—Habitat and breeding dates in New

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*Hyla fusca*, a synonym of *H. venulosa*, **Cochran, D. M.**

*Hyla fuscomarginata*, from S.E. Brazil; redescribed and figd., **Cochran, D. M.**

*Hyla fuscovaria*, from S.E. Brazil; redescribed and figd. Note on affinity with *H. nasica*, **Cochran, D. M.**

*Hyla geographica punctatissima*, from S.E. Brazil; redescribed and figd., **Cochran, D. M.**

*Hyla goeldii*, from S.E. Brazil; redescribed and figd. Note on brood pouch. **Cochran, D. M.**

*H. goughi baileyi*, from S.E. Brazil. Described and figured, **Cochran, D. M.**—*H. goughi goughi*, from S.E. Brazil; redescribed and figured. Note on affinities with *H. decipiens* and *H. nana*, **Cochran, D. M.**

*Hyla gratiosa*, occurrence in New Hanover Co., N. Carolina, **Funderburg, J. B., Jr.**—From Mississippi, **Smith, P. W. & List, J. C.**

*Hyla hallowelli*, from Japan, **Sato, I. & Takashima, H.**

*Hyla hayii*, from S.E. Brazil; redescribed and figd. Note on call and habitat, **Cochran, D. M.**

*Hyla hilli*, a synonym of *H. microps*, **Cochran, D. M.**

*Hyla imitatrix* Mir. Rib. from Rio de Janeiro. Redescribed and figured, **Cochran, D. M.**

*Hyla jervisiensis*, from Furneaux Is., Bass Strait, **Mackay, R. D.**

*Hyla kinghorni*, from Ulong, N.S.W., **Slevin, J. R.**

*Hyla langsdorffii*, from S.E. Brazil. Redescribed and figd., **Cochran, D. M.**

*Hyla laticeps*, characteristic of Argentine Chaco fauna, **Cei, J. M.**

*Hyla latopalmata*, from Queensland. Note on status and affinity with *H. lesueuri*, photo., **Slevin, J. R.**

*Hyla lesueuri*, from Oenpelli, N.T., Australia, **Mitchell, F. J.**—From Queensland and N.S.W.; description and note on habitat, photo., **Slevin, J. R.**

*Hyla leucophyllata*, from S.E. Brazil; redescribed and figured. Note on call and habits. Includes *H. l. sarayacuensis*, **Cochran, D. M.**

*Hyla linderi*, characteristic of Argentine Chaco fauna, **Cei, J. M.**

*Hyla marmorata senicula*, from S.E. Brazil; redescribed and figd., **Cochran, D. M.**

*Hyla mesophaea*, from S.E. Brazil. Redescribed and figured; note on habitat and affinity with *H. venulosa*, **Cochran, D. M.**

*Hyla microps*, from S.E. Brazil; redescribed and figd. Includes *H. hilli*, **Cochran, D. M.**

*Hyla minuta*, from S.E. Brazil; redescribed and figured. Note on variation in colour pattern. Includes *H. pallens* and *H. bivittata*, **Cochran, D. M.**

*Hyla miotympanum*, altitudinal distribution and associated vegetation in a Mexican cloud forest; diags., **Martin, P. S.**

*Hyla musica*, of S.E. Brazil, figs., **Cochran, D. M.**

*Hyla nana*, characteristic of Argentine Chaco fauna, **Cei, J. M.**—From S.E. Brazil; redescribed and figured. Note on habitat, **Cochran, D. M.**

*Hyla nasica*, from Central Chaco, Argentina, **Cei, J. M.**

*Hyla nasuta*, from Groote Eylandt, Arnhem Land. N.T., Australia, **Mitchell, F. J.**—From Queensland; description and note on habits, photo., **Slevin, J. R.**

*Hyla ocularis*, habitat and call in New Hanover Co., N. Carolina, **Funderburg, J. B. Jr.**

*Hyla pallens*, a synonym of *H. minuta*, **Cochran, D. M.**

*Hyla pardalis* from S.E. Brazil, redescribed and figd. Includes *H. corticalis*, **Cochran, D. M.**

*Hyla parkeri*, from S.E. Brazil, redescribed and figd. Note on relationship with *H. squalirostris* and habitat, **Cochran, D. M.**

*Hyla parvidens*, from Cox R., N.S.W., **Slevin, J. R.**

*Hyla peroni*, from Arnhem Land, N.T. and R. Murray, S. Aust.; note on distribution, **Mitchell, F. J.**—From Queensland and N.S.W.; description and note on habits, photo., **Slevin, J. R.**

*Hyla perpusilla*, from S.E. Brazil; redescribed and figured, **Cochran, D. M.**

*Hyla phaeocrypta phaeocrypta*, distribution in Tennessee restricted to large swamps, **Gentry, G.**

*Hyla phaeota cyanosticta* extension of range into Veracruz; redescription, **Shannon, F. A. & Werler, J. E. (2).**

*Hyla phrynoderma*, characteristic of Argentine Chaco fauna. **Cei, J. M.**

*Hyla polytaenia*, from S.E. Brazil; redescribed and figured, note on habits. Includes *H. semiguttata*, **Cochran, D. M.**

*Hyla prasina* Burmeister, considered a valid species, redescribed. Note on call, **Cochran, D. M.**

*Hyla raddiana*, from Central Chaco, Argentina, **Cei, J. M.**—*H. raddiana raddiana*, from S.E. Brazil; redescribed and figured, **Cochran, D. M.**

*Hyla raniceps*, from S.E. Brazil; redescribed and figured. Includes *H. spegazzinii*, **Cochran, D. M.**

*Hyla regilla*, associated with *Bufo microscaphus californicus* in California, **Blair, A. P.**—Ecology and behaviour; note on food and enemies. Albino from Los Angeles County, California, **Brattstrom, B. M. & Warren, J. W.**—From Montana, **Brunson, R. B.**—Effects of sucrose on development, **Driscoll, W. T. & Eakin, R. M.**—From Union Co., Oregon; note on breeding dates, **Ferguson, D. E. (1).**—Range in Canada; map; records, **Logier, E. B. S. & Toner, G. C.**—From saline pools in Baja California, **Murray K. F.**

*Hyla robertsororum*, tadpole descd. and figd., comparison with *H. eximia*, *H. bistincta*, *Plectrohyla guatemalensis*. Considered morphologically intermediate between *Plectrohyla* and *H. bistincta*, **Rabb, G. B. & Mosimann, J. E.**

*Hyla rubella*, from Groote Eylandt, N.T., Australia, **Mitchell, F. J.**—From Queensland and N.S.W.; redescription and note on habitat, photo., **Slevin, J. R.**

*Hyla semiguttata*, considered a synonym of *H. polytaenia*, **Cochran, D. M.**

*Hyla similis*, from S.E. Brazil; figures and description, **Cochran, D. M.**

*Hyla smithi*, breeding time in Ostula, Michoacan, **Peters, J. A. (3).**

*Hyla spegazzini*, from Central Chaco, Argentina, **Cei, J. M.**—A synonym of *H. raniceps*, **Cochran, D. M.**

*Hyla squalirostris*, from S.E. Brazil; redescribed and figured. Notes on affinity with *H. parkeri* and habits, **Cochran, D. M.**

*Hyla squirella*, habitat in new Hanover Co., N. Carolina, **Funderburg, J. B. Jr.**—Occurrence in Tennessee, **Gentry, G.**—On its occurrence in Virginia, **Hoffmann, R. L. (2).**—Habitat in Bayou Tortue region, Lafayette Parish, Louisiana, **Liner, E. A.**—Abundant at night in Mississippi State, **Smith, P. W. & List, J. C.**

*Hyla strigilata*, from S.E. Brazil. Subspecies recognised and described (figs.):—*brieni* (note on habits and call); *flavoguttata*; *strigilata* (note on habitat and call), **Cochran, D. M.**

*Hyla venulosa*, from Central Chaco, Argentina, **Cei, J. M.**—From S.E. Brazil. Redescribed and figured. Includes *H. zebra* and *H. fusca*, **Cochran, D. M.**

*Hyla versicolor*, relationship between size and metabolic rate, **Davison, J.**—Notes on breeding behaviour, **Pettus, D.**—*H. v. versicolor*, habitat in Cherokee Co., Oklahoma, **Bragg, A. N. (2).**—Habitat in S

Maryland, **Cooper, J. E.**—Breeding dates in S.E. North Carolina, **Funderburg, J. B. Jr.**—Of Tennessee; note on egg laying season, **Gentry, G.**—Range in Canada; records; map, **Logier, E. B. S. & Toner, G. C.**—From Athens area, N.C. Georgia. Note on habits and breeding dates, **Martof, B.**—From Mississippi, **Smith, P. W. & List, J. C.**

*Hyla werneri*, from S.E. Brazil; redescribed and figured, **Cochran, D. M.**

*Hyla zebra*, a synonym of '*H. venulosa*', **Cochran, D. M.**

*Hyla c. cinerea* x *evittata* habitat and call in S. Maryland, **Cooper, J. E.**

*Nototheca fissilis*, translation of redescription, fig., **Cochran, D. M.**

*Phyllomedusa*, key to the species from S.E. Brazil. Species recognised and redescribed, figs.:—*P. appendiculata* (note on nesting habits, habitat and voice); *P. burmeisteri*; *P. guttata* (note on habitat, voice, tadpole); *P. rohdei* (includes *Brady-medusa moschata*). Note on habits, eggs and larvae of *rohdei*, **Cochran, D. M.**—*P. sawagii*, from Central Chaco, Argentina. *P. hypochondrialis* characteristic of Chaco fauna, note on occurrence in area, **Cei, J. M.**

*Plectrohyla*, relation with "*Hyla distincta*" group discussed. *P. guatemalensis*, tadpole desc'd., **Rabb, G. B. & Mosimann, J. E.**

*Pseudacris brachyphona*, distribution and habitat in Tennessee. *P. nigrita feriarum*, of Tennessee. *P. n. triseriata*, note on distribution and breeding season in Tennessee, **Gentry, G.**—Occurrence in Virginia, **Hoffman, R. L. (2).**—From 2500 ft. Pickens County, Georgia, first record from Georgia. Note on habitat and breeding times and relationship with *P. nigrita feriarum*, **Martof, B. & Humphries, R. L.**—First record of occurrence in N. Carolina, **Schwartz, A. (1).**—*P. nigrita*, relationship between size and metabolic rate, **Davison, J.**—*P. nigrita feriarum*, of S. Maryland, **Cooper, J. E.**—From Athens area, N.C. Georgia. Note on variability of middorsal stripe and breeding dates, **Martof, B.**—From Mississippi, **Smith,**

**P. W. & List, J. C.**—*P. nigrita kalmi* subsp. nov. Centreton (= Bougher), 5 mls. N.E. Moorestown, Burlington County, New Jersey. Closely resembles *P. n. triseriata*. Note on variation in *P. nigrita* subsp. p. 1, **Harper, F. (2).**—*P. n. nigrita*, *P. n. feriarum*, *P. ornata*, from New Hanover Co., N. Carolina; note on habitats and breeding dates, **Funderburg, J. B. Jr.**—*P. nigrita triseriata*, abundant in Cherokee Co., Oklahoma, **Bragg, A. N. (2).**—*P. nigrita triseriata*, *P. nigrita septentrionalis*, from Montana, **Brunson, R. B.**—*P. nigrita triseriata*, type locality restricted to the area between Rush Creek and Big Creek, route from New Harmony to Mt. Vernon, Posey Co., Indiana, **Harper, F. (1).**—Habitat in Bayou Tortue region, Lafayette Parish, Louisiana, **Liner, E. A.**—*P. nigrita triseriata*, *P. n. septentrionalis*, range in Canada; records; map, **Logier, E. B. S. & Toner, G. C.**—*P. nigrita triseriata*, cholinesterase and reflex activity, **Sawyer, C. H.**—Study of the development of the urostyle, **Stokely, P. S. & List, J. C.**

*Pseudinae*, deserves rank of subfamily of the HYLIDAE. Key to separate it from HYLINAE, **Cochran, D. M.**—*Pseudis*, two species recognised and described in S.E. Brazil, figs., *P. bolbodactyla* (figs.); *P. fusca*, **Cochran, D. M.**

*Pterohyla fodiens*, from Sonora, Mexico; note on ossification of head, **Zweifel, R. G. & Norris, K. S.**—Skull figd., **Peters, J. A. (3).**

*Trachycephalus*, generic diagnosis. Distinguished from *Hyla*, *Aparasphendodon* and *Phyllomedusa*, **Cochran, D. M.**—*T. nigromaculatus*, from S.E. Brazil; redescribed and figured. Note on habits in bromeliads and call, **Cochran, D. M.**

*Tripurion petasatus*, skull figd., **Peters, J. A. (3).**

#### HYPEROLIIDAE

References at present retained under RHACOPHORIDAE.

LEIOPELMIDAE, see ASCAPHIDAE.

## LEPTODACTYLIDAE

Key to the genera of southeastern Brazil, **Cochran, D. M.**

*Adelotus brevis*, from Queensland and N.S.W.; description (photo.) and note on habitat, **Slevin, J. R.**

*Basanitia bolbodactyla* from S.E. Brazil; redescribed and figured, **Cochran, D. M.**—*B. lactea*, from S.E. Brazil; redescribed and figured. Note on affinities with *Eleutherodactylus latidiscus*, **Cochran, D. M.**

*Calyptocephala gayi*, habits in captivity, **Benl, G.**

*Ceratophrys*, key to species from S.E. Brazil. Species recognised, described and figured:—*appendiculata* (note on habits): *boiei* (note on habits and voice): *cristiceps*: *fryi*: *ornata*: *varia* (includes *dorsata*); note on voice, **Cochran, D. M.**—*C. ornata*, from xeric clayey region of San Luis, Argentine Chaco. *C.* (= *Stombus*) *piroctii*, characteristic of Chacoan fauna; note on ecology and breeding dates, **Cei, J. M.**—In captivity, photos., larval buccal region figd., **Gallardo, J. M.**

*Craspedoglossa*, generic characters defined, distinct from *Zachaeus*, *C. stejegeri*, from S.E. Brazil; redescribed and figured. Note on type locality and affinity with *C. sanctaetharinae*, **Cochran, D. M.**

*Crinia georgiana*, from Nangabrook, W. Australia; description and note on habitat, **Slevin, J. R.**—*C. signifera*, on genetic divergence of east and west Australian populations; crosses produce inviability of progeny, *C. tasmaniensis* crossing experiments with *E. Australian C. signifera*; suggestion of *tasmaniensis* having evolved from a mainland *signifera*, **Moore, J. A. (1)**.—*C. s. signifera*, from Queensland, N.S.W. and W. Australia; description (photo.) and note on habitat, **Slevin, J. R.**—*C. tasmaniensis*, from Furneaux Islands, Bass Strait, **Mackay, R. D.**

*Crossodactylodes*, generic characters defined. *C. pintoii*, from S.E. Brazil; redescribed and figured. Note on affinities with *Crossodactylus* and *Cycloramphus ohausi*, **Cochran, D. M.**

*Crossodactylus*, generic characters defined. Key to the S.E. Brazil species. Note on thumb spines. *C. gaudichaudi*, common near Rio de Janeiro. Note on eggs, voice and habitat, figs. *C. aeneus*, from Teresopolis; redescribed and figd. *C. dispar*, from S.E. Brazil; redescribed and figd. *C. trachystoma*, from Minas Gerais; redescribed and figd., **Cochran, D. M.**

*Cycloramphus* taxonomic position discussed. Includes *Iliodiscus*. Species recognised, desc'd. and figd.:—*C. asper*, *C. distinctus*, *C. fuliginosus*, *C. dubius*, *C. pinderi*, *C. eleutherodactylus*, *C. granulatus*. Pectoral girdles and urostyles figd. *C. fuliginosus*, includes *Telmatobius brasiliensis*, *Iliodiscus lutzii*, *Grypsiscus scleromeris*; *C. asper* includes *C. boulengeri*, *T. duseni*, *I. semi-palmatus*, **Bokermann, W. C. A.**—Discussion of genus; characters defined. Key to species of S.E. Brazil. Species redescribed and figured:—*asper*, *eleutherodactylus* (note on habitat), *fuliginosus*, *granulosus*, *neglectus*, *ohausi* (includes *C. distinctus* Lutz), *umbrius*, **Cochran, D. M.**

*Cyclorana*, from Queensland. Species described and figured (photos):—*alboguttatus*, *australis*, *brevipes*, *inermis*, *slevini*. Notes on habitat, **Slevin, J. R.**—*C. australis*, from Arnhem Land, N. Australia, **Mitchell, F. J.**

*Eleutherodactylus*, note on Mexican species, **Bumzahem, C. B.**—Generic characters defined. Key to species of S.E. Brazil. Species redescribed and figd.:—*binotatus*: *guentheri* (distinct from *Hylodes gollmeri* Peters): *nasutus* (note on habitat and voice): *parvus* (note on habitat): *unistriatus* *holsti*, **Cochran, D. M.**—Of Los Tuxtlas Range, Veracruz. Species recognised:—*dunni*: *loki* sp. nov., 3500 ft. Volcan San Martin, Veracruz, figs.; belongs to *rhodopis* group, p. 370: *megalotympanum* sp. nov., 3–4000 ft., Volcan San Martin, Veracruz; related to *E. spatulatus*, photo., hand and foot figs., p. 372: *rhodopis*: *sammartinensis* sp. nov., 3500 ft., Volcan San Martin, Veracruz; related to *E. dorsoconcolor*, fig., p. 375: *E. vulcani* sp. nov.,

3500 ft., Volcan San Martin, Veracruz; related to *E. conspicuus* and *E. alfredi*, photo., figs. p. 379, **Shannon, F. A. & Werler, J. E. (2)**.—Costa Rican species described:—*E. mimus* **sp. nov.**, 5 km. N.N.E. Tilaran, Guanacaste Province, Costa Rica; in *gollmeri* group (incl. *noblei*), found in association with *noblei*, p. 522, photograph: *E. vocator*, **sp. nov.**, Agua Buena, Puntarenas Province, Costa Rica; related to *E. diastema*; p. 522, photograph: *E. diastema*, photograph, **Taylor, E. H.**—*E. stenodiscus* **sp. nov.**, from Pico Periquito, Rancho Grande, Estado Aragua, Venezuela p. 2; allied to *E. parvus*, *E. nigrovittatus* and *E. andrewsi*. *E. reticulatus* **sp. nov.** from slope of Pico Periquito  $\pm$  1275 m., Rancho Grande, Estado Aragua, Venezuela, p. 4; note on relationships, *E. anotis*, **sp. nov.** from Rancho Grande, 1090 m., Estado Aragua, Venezuela, p. 7; related to *E. surdus*, *E. roseus*, *E. whymperi*, *E. ventrivittatus*, *E. carvalhoi*, *E. ventrimarmoratus* and *E. carmelitae*, Occ. Pap. Mus. Zool. Univ. Mich. 561, 1955, **Walker, C. F. & Test, F. H.**—*E. greggi*, **sp. nov.** from Volcan Tajumulco, near San Marcos, Guatemala; allied to *E. mexicanus*. Copeia 1955 p. 118, **Bumzahem, C. B.**—*E. hidalgoensis*, altitudinal distribution and associated vegetation in a Mexican cloud forest; diags., **Martin, P. S.**—*E. latrans*, natural history notes, **McAlister, W.**—*E. ricordi*, key to subspecies *ricordi*, *rogersi*, *caspari*, *planirostris*. Note on evolution of species in the Bahamas, **Goin, C. J.**—*E. ricordi rogersi* **subsp. nov.** from Darby Island, Exuma Cays, Bahama Islands 25° 50' S. 70° 11' W.; allied to *E. planirostris*, Amer. Mus. Novit. No. 1708, 1955, p. 1 fig., **Goin, C. J.**

*Elosia*, generic characters defined. Key to species of S.E. Brazil. *E. divisa*, is a synonym of *Eleutherodactylus guentheri*: *E. bufonium*, a synonym of *E. nasus*: *E. vomerina*, a synonym of *Crossodactylus gaudichaudi*. *E. aspera*, from S.E. Brazil; redescribed and figd. *E. lateristriata*, redescribed and figd. *E. nasus*, redescribed and figd. Includes *E. bufonium*, **Cochran, D. M.**

*Eupemphix nana*, assigned to *Physalaemus*, **Cochran, D. M.**

*Eupsophus*, generic characters defined. Key to species of S.E. Brazil. Species redescribed and figd.:—*lutzi*, *miliaris* (note on habitat, includes *E. fuliginosus*, Fitzinger), *petropolitae*, **Cochran, D. M.**

*Glauertia orientalis*, from Groote Eylandt, N.T., Australia, **Mitchell, F. J.**

*Grypiscus scleromeris*, considered synonymous with *Cycloramphus fuliginosus*, **Bokermann, W. C. A.**

*Heleioporus centralis*, *Heleioporus* sp. from N. of Zanthus, W. Australia; note on habitat, breeding dates, **Slater, P. & Lindgren, E.**

*Ilodiscus*, genotype designated. Considered a synonym of *Cycloramphus*. *I. lutzi* a synonym of *C. fuliginosus*. *I. semipalmatus* a synonym of *C. asper*, **Bokermann, W. C. A.**

*Lechriodus fletcheri*, from Ulong, 1800 ft., N.S.W.; description (photo), note on habitat, breeding, **Slevin, J. R.**

*Lepidobatrachus asper*, characteristic species of Argentine Chaco. Note on small size, skin and colour of Punto de los Llanos individuals; breeding dates, photos., **Cei, J. M.**

*Leptodactylus*, from Argentine Chaco. Species recognised:—*podicipinus*, *ocellatus*, *chaquensis*, *bufonius* (characteristic species of area; subterranean nest), *prognathus* (from Punta de los Llanos), *sybilator* [*sibilatrix*], *mystaceus* (characteristic species), *gracilis*, *laticeps* (characteristic species), **Cei, J. M.**—Generic characters defined. Key to species of S.E. Brazil. Species redescribed and figd.:—*troglodytes*: *gracilis* (note on voice and habitat): *marmoratus* (includes *L. trivittatus*; note on nesting habits): *mystaceus* (note on voice and presence of shoulder gland): *mystacinus* (note on habitat): *ocellatus* (includes *L. caliginosus* Girard and *L. ocellatus macrosternum* Mir. Rib.): *pentadactylus flavopictus* and *p. labyrinthicus*: *podicipinus*: *sibilatrix* (note on habits):

*troglodytes* (note on voice and habits), **Cochran, D. M.**—*L. melanonotus*, note on breeding time in Ostula, Michoacan, **Peters, J. A. (3).**—Habitat in Veracruz, **Shannon, F. A. & Werler, J. E. (1).**—From Sonora, Mexico; extension of range. Note on call and habitat. Includes *L. occidentalis*, **Zweifel, R. G. & Norris, K. S.**—*L. occidentalis*, a synonym of *L. melanonotus*, **Zweifel, R. G. & Norris, K. S.**—*L. ocellatus*, membrane potentials in the muscles, **Harris, E. J. & Martins-Ferreira, H.**—Spermiation and degree of activity by injections of various chemicals, **Soares, M. P.**

*Limnodynastes*, of E. Australia. Species and subspecies recognised, described and figd. (photos.):—*convexusculus*, from Queensland; *dorsalis dumerili*, from N.S.W.; *d. terraereginae*, from Queensland and N.S.W.; *fletcheri*, from Queensland and N.S.W.; *ornatus*, from Queensland; *peronii peronii*, from N.S.W.; *salmini*, from Queensland and N.S.W.; *tasmaniensis*, from Queensland and N.S.W. Notes on habitats, **Slevin, J. R.**—*L. ornatus*, from Arnhem Land, N. Territory, Australia, **Mitchell, F. J.**

*Megaelosia*, generic characters defined. *M. goeldii*, from S.E. Brazil; redescribed and figured. Note on habitat, **Cochran, D. M.**

*Microbatrachylus pygmaeus*, from Los Tuxtlas Range, Veracruz, **Shannon, F. A. & Werler, J. E. (2).**

*Mixophyes f. fasciolatus*, from N.S.W.; note on resemblance to *f. schevilli*, description and note on habitat, **Slevin, J. R.**

*Notaden bennetti*, from Queensland and N.S.W.; description (photo.) and note on habitat, **Slevin, J. R.**

*Odontophrynus*, generic characters defined. Three species recognised:—*cultripes*, *americanus*, *variegatus*. Descriptions and figures given of *americanus* and *cultripes* (note on habits and voice), **Cochran, D. M.**—*O. americanus*, *O. cultripes* from Argentine Chaco. *O. americanus* taken in xeric clayey region of San Luis, **Cei, J. M.**

*Paludicola bresslawi*, a synonym of *Physalaemus signiferus*, **Cochran, D. M.**

*Phrynanodus*, generic characters defined. *P. nanus*, translation of original description; fig. Note on affinities with *Eleutherodactylus* and *Batrachophrynus*, **Cochran, D. M.**

*Physalaemus*, generic characters defined. Key to S.E. Brazil species. Descriptions and figures given of the following species:—*cuvieri*, *fuscomaculatus*, *gracilis*, *olfersi*, *signiferus*. *P. signiferus*, includes *Paludicola bresslawi*, **Cochran, D. M.**

*Pleurodema*, generic characters defined. *P. verrucosa*, status uncertain, **Cochran, D. M.**—*P. bibroni*, abnormal specimen, possible persistence of Müllerian canal, **Capurro, L. (1).**—*P. bufonina*, from Inio River, Chiloé, Chile; redescribed, photo., **Capurro, L. (2).**

*Pseudopaludicola*, generic characters defined. *P. ameghini*, from S.E. Brazil; redescribed and figured. Note on habitat, **Cochran, D. M.**

*Pseudophryne bibroni*, from Queensland and N.S.W.; description (photo.) and note on colour and habitat, **Slevin, J. R.**—*P. coriacea*, from Ulong, N.S.W., photo., **Slevin, J. R.**

*Syrhropus*, note on distribution and variation between species, **Jameson, D. L. (2).**—*S. cystignathoides*, *S. latodactylus*, altitudinal distribution and associated vegetation zones in a Mexican cloud forest; diags., **Martin, P. S.**—*S. leprus*, from Los Tuxtlas Range, Veracruz, **Shannon, F. A. & Werler, J. E. (2).**—*S. marnocki*, population study in S.C. Texas. Aspects discussed:—environmental relations, breeding, habitat, call, feeding, dispersal, enemies, growth, **Jameson, D. L. (2).**

*Telmatobiinae* Fitzinger, not Vellard, 1843. Note on deviation from normal nomenclatural practice of Vellard's 1951 work, **Burger, W. L.**

*Telmatobius*, on the group *jelski*. Four species recognised and descd.:—*eujelski* (*j. jelski*, *j. walkeri*, *j. longitarsis* subsp. nov. 4500 m. Huan-cavelica, Puquío p. 15, *j. bufo*

subsp. nov. 2800–3200 m. eastern region of Ayacucho p. 16): *rimae* (*r. rimae*, *r. meridionalis* subsp. nov. 2350 m. Lima, p. 18): *arequipensis*, sp. nov. 2400–2600 m Yura p. 20 (*a. arequipensis*, *a. natator* subsp. nov. Characato, Arequipa, p. 20): *brevirostris* (*b. brevirostris* sp. nov. Chasqui, province of Ambo 2000 m., p. 22, *b. punctatus* subsp. nov., 2300 m., Santa Maria del Valle, Huanuco, p. 22, *b. parvulus* subsp. nov., 3600 m., Caina, Huanuco, p. 23, **Vellard, J.**—*T. brasiliensis*, considered synonymous with *Cycloramphus fuliginosus*; *T. dusei*, considered synonymous with *C. asper*, **Bokermann, W. C. A.**—*T. halli edentatus* subsp. nov. from region of the geysers, San Pedro de Atacama, Tatio volcano, Chile, 2500 metres, photo. p. 150, **Capurro, L.** (3).

*Tomodactylus*, key to the species *macrotimpanum*, *dilatatus*, *albolabris*, *angustidigitum*, *nitidus*, *petersi*; *T. dilatatus* sp. nov. 4 mls. W. of Mazatlan, 7400 ft., Guerrero, p. 155: *T. fuscus* sp. nov. 1½ mls. S.E. of Huitzilac, 7800 ft., Morelos, Mexico, p. 157, **Davis, W. B. & Dixon, J. R.**

*Uperoleia marmorata*, *U. rugosa*, from Queensland and N.S.W.; note on colour pattern and habitat, photos., **Slevin, J. R.**

*Zachaeus*, generic characters defined. *Z. parvulus*, from Rio de Janeiro; redescribed and figured. Note on affinity with *Craspedoglossa stejnegeri*, **Cochran, D. M.**

#### MICROHYLIDAE

Key to the genera of S.E. Brazil, **Cochran, D. M.**

Key to genera and species occurring in S.W. Africa, **Mertens, R.** (3).

*Asterophrys rufescens*, *A. valvifera*, *A. turpicola*, *A. slateri* sp. nov. from Omati, near Port Moresby, Papua; related to *A. boettgeri*, p. 1, **Loveridge, A.** (4).

*Breviceps adpersus*, from S.W. Africa; note on distribution of species, photo., **Mertens, R.** (3).

*Chaperina fusca*, from Leyte Island, Philippines, **Leviton, A. E.**

*Chiasmocleis*, generic characters defined. Key to S.E. Brazil species

*C. albopunctata*, known from Paraguay, Mato Grosso and Goias. Redescription and figs. *C. bicegoi*, translation of original description, **Cochran, D. M.**

*Cophixalus oxyrhinus* from Omati, near Port Moresby, Papua, **Loveridge, A.** (4).

*Elachistocleis*, generic characters defined. *E. ovalis*, from S.E. Brazil; redescribed and figured. Note on pattern variation, **Cochran, D. M.**—*E. ovalis bicolor*, from Central Chaco, Argentina, **Cei, J. M.**

*Hypopachus*, generic diagnosis, **Cochran, D. M.**—Notes on distinguishing characters of the species, **Davis, W. B.**—*H. aquae*, anatomical study of ingestive, digestive and respiratory systems of tadpole, figs., **Savage, R. M.**—*H. alboventer reticulatus* subsp. nov. 2 mls. S. Almolonga (= Amula), 5600 ft., Guerrero, Mexico p. 71, **Davis, W. B.**—*H. (= Dermatoneotus) muelleri*, characteristic of Chacoan fauna, note on habitat and range in Argentine Chaco, **Cei, J. M.**—*H. mülleri*, redescribed and figured. Used as bait on fish hooks, **Cochran, D. M.**

*Kaloula picta*, from Cebu and Panay Is., Philippines, **Leviton, A. E.**—*K. pulchra taprobanica*, of Ceylon; note on distribution, **Silva, P. H. D. H. de** (1).

*Metopostira ocellata*, from Omati, near Port Moresby, Papua, **Loveridge, A.** (4).

*Microhyla*, the mating call as an isolating mechanism between *M. carolinensis* and *M. olivacea*; study of calls in overlap zone, in E. Texas and Oklahoma, **Blair, W. F.** (2).—Size as an isolating mechanism at area of overlap of *M. olivacea* and *M. carolinensis*, **Blair, W. F.** (3).—Generic diagnosis, **Cochran, D. M.**—On courtship and mating behaviour; ♂ flexes first, **Jameson, D. L.** (1).—Species recognised in Ceylon:—*ornata*, *zeylanica*, *rubra*. Notes on distribution, **Silva, P. H. D. H. de** (1).—*M. c. carolinensis*, *M. c. olivacea*, occurrence in Cherokee Co., Oklahoma, **Bragg, A. N.** (2).—*M. c. carolinensis*, on occurrence in S. Maryland, **Cooper, J. E.**—Common in New Hanover Co., N. Carolina.

note on habitat and breeding dates, **Funderburg, J. B. Jr.**—Distribution and habitat in Tennessee, **Gentry, G.**—Habitat in Bayou Tortue region, Lafayette Parish, Louisiana, **Liner, E. A.**—From Athens area N.C. Georgia; note on breeding dates, **Martof, B.**—From Mississippi; abundant in coastal area, **Smith, P. W. & List, J. C.**—*M. fissipes*, from Japan, **Sato, I. & Takashima H.**—*M. subnigra*, from S.E. Brazil; redescribed and figured, **Cochran, D. M.**

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*Rana clamitans*, habitat in S. Maryland, **Cooper, J. E.**—Relationship between size and metabolic rate, **Davison, J.**—Breeding dates in New Hanover Co., N. Carolina, **Funderburg, J. B. Jr.**—Distribution, habitat and breeding season in Tennessee, **Gentry, G.**—Range in Canada; records; map, **Logier, E. B. S. & Toner, G. C.**—From Athens area, N.C. Georgia. Note on breeding dates and habitat, **Martof, B.**—From

Mississippi, **Smith, P. W. & List, J. C.**—Thyroid function, **Steinmetz, C. H.**—*R. c. clamitans*, from Cherokee Co., Oklahoma, **Bragg, A. N. (2).**—Habitat in Bayou Tortue region, Lafayette Parish, Louisiana, **Liner, E. A.**

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*Rana everetti* subsp. from Negros Oriental, Philippines; table of comparison between *e. everetti* and *e. luzonensis*, **Brown, W. C. & Alcalá, A.**

*Rana fusca*, analysis of neural induction by use of marked organizers, **Ficq, A. (1).**

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*Rana gracilis*, from Ceylon; distribution, **Silva, P. H. D. H. de (1).**

*Rana graeca*, sex races in the Pisa district, Italy, **Lepori, N. G.**

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*Rana greeni*, from Ceylon; note on distribution, **Silva, P. H. D. H. de (1).**

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*Rana grylio*, habitat in Bayou Tortue region, Lafayette Parish, Louisiana, **Liner, E. A.**—Abnormal circulatory system; ventral abdominal vein absent, **Rosine, W. N. & Brande, P. F.**—From Mississippi; note of differences from *R. catesbeiana*, **Smith, P. W. & List, J. C.**

*Rana hexadactyla*, from Goa, **Chari, V. K.**—Abnormal systemic arch, **Ramamurthi, B. N.**—From Ceylon; note on distribution, **Silva, P. H. D. H. de (1).**

*Rana ijimae*, from Japan, **Sato, I. & Takashima, H.**

*Rana ishikawae*, of Japan, **Sato, I. & Takashima, H.**

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*Rana limnocharis*, from Japan, **Sato I. & Takashima, H.**—*R. l. limnocharis*, from Ceylon; note on distribution, **Silva, P. H. D. H. de (1).**—*R. l. vittigera*, habitat in Mindoro, Philippines, **Brown, W. C. & Alcalá, A.**—*R. l. (?vittigera)*, from Leyte Island, Philippines, **Leviton, A. E.**

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*Rana loveridgei*, see under *Ptychadena*.

*Rana maccarthyensis*, see under *Ptychadena*.

*Rana macrodon visayanus*, habits and habitat in Negros Oriental, Philippines; note on escape mechanisms of *visayanus* and *m. magna*; *R. m. acanthi*, from Mindoro, table of comparison between *acanthi* and *visayanus*, **Brown, W. C. & Alcalá, A.**—*R. macrodon visayanus*, from Samar Island, Philippines, **Leviton, A. E.**

*Rana mascareniensis*, see under *Ptychadena*.

*Rana moorei*, comparison with *R. boylei*, *R. muscosa*, *R. tarahumarae*, *R. pustulosa*, *R. pueblae*; note on ecological relations with other species of *Rana*, photo., **Zweifel, R. G.**

*Rana muscosa*, considered specifically distinct from *R. boylei*. Eggs, larval stages, habitat, food, predation habits, range and variation discussed; pectoral girdle figd.; photo, **Zweifel, R. G.**

*Rana namryei*, from Japan, **Sato, I. & Takashima, H.**

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*Rana nigromaculata*, effects of centrifugation on isolated ectoderm and whole embryo, **Karasaki, S. & Yamada, T.**—*R. n. nigromaculata*, *R. n. brevipoda*, from Japan, **Sato, I. & Takashima, H.**

*Rana occipitalis*, new for the Ivory Coast, **Loveridge, A. (3).**

*Rana ornata*, from Dar-es-Salaam, **Mertens, R. (1).**—*R. o. ornata*, from Kilwa, S. Tanganyika, **Loveridge, A. (1).**—*R. (Pyxicephalus) o. ornata*, from arid Northern Territories, Navrongo, Gold Coast, **Loveridge, A. (2).**

*Rana ornatissima*, from S.W. Africa; note on species distribution, **Mertens, R. (3).**

*Rana oxyrhynchus*, see under *Ptychadena*.

*Rana pipiens*, developmental potencies of embryonic tissue derived from normal and overripe eggs, **Allison, J. E.**—Oxygen consumption

after renal damage and adrenalectomy, **Angerer, C. A. & Murray, M. C.**—Cortical impression during egg cleavage, **Ballard, W. W.**—Energetics of development; study of metabolism in egg, **Barth, L. G. & L. J.**—Lateral motor column development, **Beaudoin, A. R.**—Associated with *Bufo woodhousei*, *B. microscaphus* and *B. punctatus* in Utah, **Blair, A. P.**—Development of cholinesterase in the optic lobes, **Boell, E. J. Greenfield, P. & Shen, S. C.**—Histochemical study of testis, **Burgos, M. H.**—Effect of hormones on sperm release, **Burgos, M. H. & Ladman, A. J.**—From Montana, **Brunson, R. B.**—Partial anaerobiosis in the embryo, **Cohen, A. I.**—Comparative morphology of sensory endings in striated muscle, **Cole, W. V.**—Of S. Maryland, **Cooper, J. E.**—Relationship between size and metabolic rate, **Davison, J.**—Mitotic frequency in normal and regenerating tail tips, **Di Berardino, M.**—From S. and W. Arizona. Note on colour pattern; suggestion of effect of environment, **Duellman, W. E. (2).**—Study of ribonuclease and deoxyribonuclease during development, **Finnamore, F. J.**—Deoxyribonucleic acid content of tadpole tail mesenchyme, **Freed, J. J. & Green, E. U.**—Physiological processes associated with sperm emission, **Giltz, M. L.**—Gastrula tissue movements, **Gregg, J. R. & Klein, D.**—Synthesis of DNA at various developmental stages, **Gregg, J. R. & Løvtrup, S.**—Incorporation of radio-active glycine into oocyte proteins, **Kemp, N. E.**—Transplantation of living nuclei of late gastrulae to enucleated eggs, **King, T. J. & Briggs, R.**—Sensitivity of male to exogenous chorionic gonadotropin, **Kontaxis, N. E., Maher, J. R. & Pickering, D. E.**—Inhibitors of development, **Liedke, K. B. & others.**—Range in Canada; records; map, **Logier, E. B. S. & Toner, G. C.**—Altitudinal distribution and associated vegetation in a Mexican cloud forest; diags., **Martin, P. S.**—Turnover of radioiodine in tadpoles, **Money, W. L., Lucas, V. & Rawson, R. W.**—Study of electrical activity of single muscle fibres, **Perryman, J. H.**—Initiation of pronephric function, **Rappaport, R.**—Remarks on

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*Rana palustris*, cortical ingression during egg cleavage, **Ballard, W. W.**—Of S. Maryland, **Cooper, J. E.**—Occurrence and habitat in New Hanover Co., N. Carolina, **Funderburg, J. B. Jr.**—Distribution in Tennessee; eggs deposited February and March, **Gentry G.**—Range in Canada; records; map, **Logier, E. B. S. & Toner, G. C.**—From Oconee County, N.C. Georgia—most southerly record, **Martof, B.**

*Rana pretiosa*, distribution in Oregon, map; relationship with *R. cascadae* and *R. aurora* discussed. Subspecies recognised:—*p. pretiosa*, *p. luteiventris*, **Dunlap, D. G.**—Analysis of stomach contents, **Moore, J. E. & Strickland, E. H.**—*R. p. luteiventris*, occurrence in Union Co., Oregon, **Ferguson, D. E. (1).**—*R. p. pretiosa*, from Montana, **Brunson, R. B.**—Range in Canada and Alaska; records, **Logier, E. B. S. & Toner, G. C.**

*Rana pueblae*, sp. nov., 2.8 mls. N.E. of Huauchinango, Rio Texcapa, Puebla, Mexico. A member of the *Rana boylei* group geographically intermediate between *R. pustulosa* and *R. moorei* p. 253, fig., **Zweifel, R. G.**

*Rana pustulosa*, from Oaxaca, Mexico; extension of range, **Smith, H. M. & Burger, W. L.**—Ecological study. Discussion on status, relationships, breeding, range; photo., **Zweifel, R. G.**

*Rana retropunctata*, a synonym of *R. maccarthyensis*, **Loveridge, A. (3).**

*Rana ridibunda*, of Great Poland National Park, Poznan, **Berger, L.**—In Germany; notes, hand figd., **Freitag, G. E.** in **Stresemann, E.**—On the systematic position and affinity with *R. esculenta*, **Kauri, H.**—Of S. Carinthia; comparison with *R. esculenta*, **Schweiger, H.**—Distribution of alkaline phosphatase in the kidneys, **Varo, M. I. & M. T.**—*R. r. perezi*, life cycle in Spain, **Balcells, E.**—*R. r. ridibunda*, from Iran, **Schmidt, K. P. (3).**—Distribution in Lower Austria, **Sochurek, E. (1).**

*Rana rugosa*, from Japan, **Sato, I. & Takashima, H.**

*Rana sauteri*, from Japan, **Sato, I. & Takashima, H.**

*Rana septentrionalis*, range in Canada; records; map, **Logier, E. B. S. & Toner, G. C.**

*Rana sevosa*, from Jackson Co., Mississippi; young described, **Smith, P. W. & List, J. C.**

*Rana signata glandocula*, from Samar Island, Philippines, **Leviton, A. E.**—*R. s. similis*, from Mindoro, Philippines, **Brown, W. C. & Alcalá, A.**

†*Rana siobarensis*, sp. nov. Lower Pleistocene. Totigi Prefecture, Japan, p. 37, f. 1-3, **Shikama, T.**

*Rana stenocephala*, see under *Ptychadena*.

*Rana superciliaris*, see under *Ptychadena*.

*Rana sylvatica*, cortical ingression during egg cleavage, **Ballard, W. W.**—Relationship between size and metabolic rate, **Davison, J.**—Gastrula tissue movements, **Gregg, J. R. & Klein, D.**—Range in Canada and Alaska; records; map, **Logier, E. B. S. & Toner, G. C.**—Analysis of stomach contents, **Moore, J. E. & Strickland, E. H.**—Relationship of nerves to hind limb regeneration, **Van Stone, J. M.**—Study of the origin and morphology of the bronchial columellae, figs., **Witschi, E. (1).**—*R. s. cantabrigensis*, from Montana, **Brunson, R. B.**—*R. s. sylvatica*, breeding dates in S. Maryland, **Cooper, J. E.**—Extension of range in Tennessee, **Gentry, G.**—From Cherokee County, N. Carolina, **Schwartz, A.**

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*Rana tagoi*, from Japan, **Sato, I. & Takashima, H.**

*Rana tarahumarae*, from Sycamore Canyon, Santa Cruz Co., Arizona, **Duellman, W. E. (2).**—Ecological study; larval stages (figs.), reproductive activity and range discussed, photo., **Zweifel, R. G.**

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*Rana temporaria*, of Great Poland National Park, Poznan; note on dates of egg laying and metamorphosis, **Berger, L.**—Of Sweden, **Curry-Lindahl, K.**—Vascularisation of skin, lungs and palate; figs., **Czopek, J. (1).**—On maturation of spermatozooids, **Favard, P.**—On spermatogenesis, **Favard, P. (1).**—In Germany; notes, foot and larval mouthparts figd., **Freytag, G. E.** in **Stresemann, E.**—Habitat in district W. of L. Zurich, **Heusser, H. & Honegger, R.**—In the uptake of sodium and chloride ions, **Jorgensen, C. B., Levi, H. & Zerahn, K.**—Effect of lithium chloride on embryo development, **Lallier, R. (1).**—Effect of malononitrile on development, **Lallier, R. (2).**—Effect of ingested thyroid extract on nervous system

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[*Rana tigrina*] *R. tigrina*, predation on squirrel, **Banerji, A.**—*R. tigrina*, study of pectoral girdle and musculature, figs., **Bhati, D. P. S.**—Seasonal variations in the testes; influence on pregnancy test, **Pathak, J. D.**—Anatomy and action of the heart, **Ramaswami, L. S.**—Spermatogenesis, figs., **Sharma, G. P. & Sekhri, K. K.**—Study of venous system, figs., **Sharma, S.**—Active and passive muscle relaxation, **Singh, S. I. & I.**—*R. t. crassa*, from Ceylon, note on distribution, **Silva, P. H. D. H. de (1).**

*Rana virgatipes*, on possible occurrence in S. Maryland, **Cooper, J. E.**—Of New Hanover Co., N. Carolina; ;

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*Rana viridis*, compensatory movements after removal of a horizontal semi-circular canal, **Gribenski, A.**

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*Rana pipiens* ♀ x *Rana sylvatica* ♂, synthesis of DNA content, **Gregg, J. R. & Løvtrup, S.**—*Rana pipiens* ♀ x *R. sylvatica* ♂, gastrula tissue movements, **Gregg, J. R. & Klein, D.**

*Schoutedenella sylvatica*, *S. schubotzi*, *S. pyrrhoscelis*, *S. lameerei*, *S. hematogaster*, *S. discodactyla*, *S. vercammeni*, ecological preference in Gt. Lakes region, **Laurent, R. F.**

*Staurois chunganensis*, on courtship and mating behaviour; deposition of eggs into triangular area, **Jameson, D. L. (1).**

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Key to genera and species occurring in S.W. Africa, **Mertens, R. (3).**

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*Chiromantis microglossus*, from S.W. Africa, note on distribution of species, **Mertens, R. (3).**—*C. petersi kelleri*, from N.F.D., Kenya, **Battersby, J. C.**—*C. rufescens*, ecological preference equatorial forest in Gt. Lakes region, **Laurent, R. F.**—*C. xerampelina*, from S. Tanganyika, **Loveridge, A. (1).**

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*Hyperolius concolor concolor*, first record from Ivory Coast; note on range, **Loveridge, A. (3).**—*H. c. tuberilinguis*, from Tunduru, S. Tanganyika, **Loveridge, A. (1).**

*Hyperolius fusciventris*, new to Ivory Coast, **Loveridge, A. (3).**

*Hyperolius marmoratus*, from S.W. Africa; note on distribution of species, **Mertens, R. (3).**—Life history; call, photo., **Wager, V. A. (4).**—*H. m. ommatostictus*, from near Sanya, Kilimanjaro district, N. Tanganyika; note on colour pattern and sex dimorphism, **Mertens, R. (1).**

*Hyperolius nasutus*, from near Sanya, Kilimanjaro district, Tanganyika, **Mertens, R. (1).**

*Hyperolius nitidulus*, note on type locality; may be a variant of *H. picturatus* and not a race of *H. viridiflavus*, **Loveridge, A. (3).**

*Hyperolius parkeri rovomae*, from Kilwa, S. Tanganyika, **Loveridge, A. (1).**

*Hyperolius picturatus*, from Ivory Coast; note on affinity with *nitidulus*, suggested synonym, **Loveridge, A. (3).**

*Hyperolius puncticulatus* subsp., from Tunduru, S. Tanganyika, **Loveridge, A. (1).**

*Hyperolius pusillus* life history and egg laying habits, figs., **Wager, V. A. (2).**

*Hyperolius tuberlinguis*, life history and egg laying habits, photos., **Wager, V. A. (3).**

*Kassina deserticola* Ahl, is a synonym of *Kassina senegalensis* Dumeril and Bibron, **Mertens, R. (3).**—*K. senegalensis*, ecological preference in region of Gt. Lakes, **Laurent, R. F.**—Includes *K. deserticola* note on distribution of species, variation and habits of S.W. Africa specimens, photo., **Mertens, R. (3).**—*K. s. senegalensis*, from Achimota, Gold Coast, **Loveridge, A. (2).**

*Leptopelis bocagei*, *L. calcaratus*, *L. karissimbiensis*, *L. millsoni*, *L. signifer*, *L. aubryi*, *L. chrysi*. On ecological preference in region of Great Lakes, **Laurent, R. F.**—*L. bocagii*, from S.W. Africa; note on colour pattern and distribution; photo., **Mertens, R. (3).**—*L. viridis*, *L. boulengeri*, from Ivory Coast; note

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*Philautus*, species recognised in Ceylon :—*oxyrhynchus* : *leucorhinus* : *schmardanus* : *nasutus* : *femoralis* : *hypomelas* : *adaspersus* : *variabilis* : *semiruber* : *eximius*. Note on distribution, **Silva, P. H. D. H. de (1).**—*P. schmackeri*, from 800 to 1500 metres, Mindoro, Philippine Is., **Brown, W. C. & Alcalá, A.**

*Phlyctimantis verrucosus*, ecological preference in Gt. Lakes region, transition forest, **Laurent, R. F.**

*Rhacophorus*, on mating and courtship behaviour; male flexes first. Behaviour in *R. bambusicola*, *R. leucomystax*, *R. omeimontis*, *R. reticulatus* discussed, **Jameson, D. L. (1).**

*Rhacophorus acanthostomus*, of Ceylon, **Silva, P. H. D. H. de (1).**

*Rhacophorus a. appendiculatus*, from Leyte Island, Philippines, **Leviton, A. E.**

[*Rhacophorus*] *Polypedetes buergeri*, from Japan, **Sato, I. & Takashima, H.**—*R. buergeri*, distribution in Ceylon, **Silva, P. H. D. H. de (1).**—*R. b. microtympaanum*, distribution in Ceylon. Includes *R. dimbullae*; note on synonymies, **Silva, P. H. D. H. de (1).**

*Rhacophorus cruciger*, considered a distinct species; distribution in Ceylon, **Silva, P. H. D. H. de (1).**

[*Rhacophorus*] *Polypedetes dennysi*, on mating behaviour, **Jameson, D. L. (1).**

*Rhacophorus dimbullae*, considered a synonym of *R. buergeri microtympaanum*, **Silva, P. H. D. H. de (1).**

[*Rhacophorus*] *Polypedetes eiffingeri*, from Japan, **Sato, I. & Takashima, H.**

*Rhacophorus eques*, distribution in Ceylon, **Silva, P. H. D. H. de (1).**

[*Rhacophorus japonicus*] *Polypedetes japonicus*, from Japan, **Sato I. & Takashima, H.**

*Rhacophorus leucomystax* (?linki), from Busuanga Island, Philippines, **Leviton, A. E.**—*R. l. maculatus*, distribution in Ceylon. *R. l. cruciger*, considered a distinct species, **Silva, P. H. D. H. de (1).**—*R. l. quadri-lineatus*, habitat in Negros Oriental and Mindoro, Philippine Is., **Brown, W. C. & Alcalá, A.**

*Rhacophorus p. pardalis*, from 1200 meters in Negros Oriental, Philippine Is.; note on habitat, **Brown, W. C. & Alcalá, A.**

*Rhacophorus schlegeli arborea*. Study of the changes in fluorescent substances during development, **Hama, T. & Goto, T.**—*R. s. schlegeli*, *R. s. arborea*, from Japan, **Sato, I. & Takashima, H.**

*Rhacophorus viridis*, from Japan, **Sato, I. & Takashima, H.**

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*Scaphiopus*, spectrogram analyses of the mating call. Subgenera *Scaphiopus* and *Spea* differ markedly. *S. [Spea] hammondi* and *S. [Spea] bombifrons*, call trilled but different from each other. *S. (Scaphiopus) couchi* and *S. Scaphiopus hurteri* call not trilled but different from each other, **Blair, W. F. (1).**—On courtship and mating behaviour; pelvic amplexus. Species discussed :—*hammondi*, *holbrookii*, *bombifrons*, *couchi*, **Jameson, D. L. (1).**—Bronchial columellae absent from larval ear, **Witschi, E. (1).**—*S. bombifrons*, *S. hammondi intermontanus*, from Montana, **Brunson, R. B.**—*S. bombifrons*, *S. couchi*, records from Arizona, **Duellman, W. E. (2).**—*S. bombifrons*, *S. hammondi intermontanus* range in Canada; locality records; map, **Logier, E. B. S. & Toner, G. C.**—*S. bombifrons*, on occurrence in Arizona, **Walters, V.**—*S. couchi*, from Sonora, Mexico; note on geographical colour variants, **Zweifel, R. G. & Norris, K. S.**—*S. holbrookii albus*, a synonym of *S. holbrookii*; discussion of systematic position, **Duellman, W. E. (1).**—*S. h. hammondi*, from Baja California, **Murray, K. F.**—*S. h. holbrookii*, on likely occurrence throughout coastal belt of Maryland,

**Cooper, J. E.**—Three breeding congresses observed in one year in S.E. North Carolina, **Funderburg, J. B. Jr.**—On distribution and habitat in Tennessee, **Gentry, G.**—Rainfall as primary controller of breeding activity; response to temperature, **Gosner, K. L. & Black, I. H.**—Study of population ecology (habitat, habits, food, movements, breeding, growth and predators studied), **Pearson, P. G.**—*S. intermontanus*, occurs at 8500 ft. in S.W. Utah, **Blair, A. P.**

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*Parioxys ferricolus* Cope. Skeleton redescribed from Permian of Texas, **Moustafa, Y. S. (1).**—*Parioxys ferricolus*, affinities and phylogeny, **Moustafa, Y. S. (2).**

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Salamander track from Paleocene, Montana named *Ambystomichnus*, **gen. nov.** (for *Ammobatrachus montanensis*), **Peabody, F. E.**, p. 80.

